--IN THE CLAIMS--

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims

1.(currently amended) A method for drug discovery, said method comprising: (A) constructing one or more protein-fragment complementation assays (PCAs') wherein the molecules fused to the protein reporter fragments used in said PCAs' are identified by a method chosen from the group consisting of: (i) cDNA library screening; (ii) interaction mapping; and (iii) prior knowledge of the existence of an interaction between a pair of proteins; (B) testing the effects of chemical compounds on the activity of said assay(s); (C) using the results of said assay(s) to identify chemical compounds with desired activities with the proviso that said protein complementation assays do not utilize ubiquitin fragments and said assays are not two hybrid assays.

Claims 2-16 (canceled without prejudice or waiver)

17. (currently amended) Protein fragment complementation assays for drug discovery comprising a reassembly of separate fragments of a protein reporter molecule wherein said protein reporter fragments are fused to molecules selected from the group consisting of a receptor, a tumor suppressor gene, a kinase, a kinase substrate, an oncogene, an adaptor protein, a ubiquitin-like

molecule, and a transcription factor; wherein reassembly of the protein reporter fragments generates an optically detectable signal with the proviso that said protein fragments are not ubiquitin fragments and said assay is not a two hybrid assay.

Claims 18-25 (canceled without prejudice or waiver)

26.(currently amended) An assay composition for drug discovery comprising complementary fragments of a first protein reporter molecule, said protein complementary fragments exhibiting a detectable activity when associated, wherein each fragment is fused to a separate molecule selected from the group consisting of a receptor, a tumor suppressor gene, a kinase, a kinase substrate, an oncogene, an adaptor protein, a ubiquitin-like molecule, and a transcription factor; with the proviso that said protein fragments are not ubiquitin fragments and said assay is not a two hybrid assay.

Claims 27-29 (canceled without prejudice or waiver)

30.(previously presented) An assay composition for drug discovery comprising a product selected from the group consisting of: (a) a first fusion product comprising: 1) a first protein fragment of a first protein reporter molecule whose fragments exhibit a detectable activity when associated and 2) a second molecule that is fused to said first protein fragment; (b) a second fusion product comprising 1) a second protein fragment of said first protein reporter molecule and 2) a third molecule that is fused to said second protein fragment; and (c) a third fusion product comprising: 1) a first protein fragment of a second protein reporter molecule whose fragments

exhibit a detectable activity when associated and 2) a fourth molecule that is fused to said first protein fragment; (d) a fourth fusion product comprising 1) a second protein fragment of said second protein reporter molecule and 2) a fifth molecule that is fused to said second protein fragment; and e) a combination

of (a), (b), (c) and (d) with the proviso that said protein fragments are not ubiquitin fragments and wherein said fusion products (a) and (b) are not two hybrid constructs.

31.(previously presented) An assay composition for drug discovery comprising a nucleic acid molecule coding for a protein reporter fragment fusion product, which molecule comprises sequences coding for a product selected from the group consisting of: (a) a first protein reporter fusion product comprising: 1) a fragment of a first protein reporter molecule whose fragments can exhibit a detectable activity when associated and 2) a second molecule fused to the protein fragment of the first protein reporter molecule; (b) a second fusion product comprising 1) a fragment of a second protein reporter molecule whose fragments can exhibit a detectable activity when associated and 2) a third molecule fused to the protein fragment of the second protein reporter molecule; and (c) both (a) and (b) with the proviso that said protein fragments are not ubiquitin fragments and wherein said fusion products (a) and (b) are not two hybrid constructs.

Claims 32-39 (canceled without prejudice or waiver)

40. (New) A method for drug discovery, said method comprising: (A) constructing one or more protein-fragment complementation assays (PCAs') wherein the molecules fused to the protein reporter fragments used in said PCAs' are selected from the group consisting of a receptor, a tumor suppressor gene, a kinase, a kinase substrate, an oncogene, an adaptor protein, a ubiquitin-like molecule, and a transcription factor; (B) testing the effects of chemical compounds on the activity of said assay(s); (C) using the results of said assay(s) to identify chemical compounds with desired

activities with the proviso that said protein complementation assays do not utilize ubiquitin fragments and said assays are not two hybrid assays.

41. (New) A method for drug discovery, said method comprising: (A) constructing one or more protein-fragment complementation assays (PCAs') wherein the molecules fused to the protein reporter fragments used in said PCAs' are selected from the group consisting of p53, Chk1, ATR, ATM, Rad 51, PDK2, STAT1, FKBP, FRAP, p70S6Kinase, S6 protein, 4E-BP1, PPP2A, TNFR, TRADD, FADD, p65 subunit of NFkappaB, p50 subunit of NFkappaB, CBP, TRAF2, Ubiquitin, IKK-beta, IKK-gamma, IkappaBalpha, MEK, ERK, PI-3-Kinase, PKB, Ft1, GCN4, PDK1, GSK3, NF-AT, and Calcineurin; and domains, fragments or homologues thereof; (B) testing the effects of chemical compounds on the activity of said assay(s); (C) using the results of said assay(s) to identify chemical compounds with desired activities with the proviso that said protein complementation assays do not utilize ubiquitin fragments and said assays are not two hybrid assays.

42. (New) Protein fragment complementation assays for drug discovery comprising a reassembly of separate fragments of a protein reporter molecule wherein said protein reporter fragments are fused to molecules selected from the group consisting of p53, Chk1, ATR, ATM, Rad 51, PDK2, STAT1, FKBP, FRAP, p70S6Kinase, S6 protein, 4E-BP1, PPP2A, TNFR, TRADD, FADD, p65 subunit of NFkappaB, p50 subunit of NFkappaB, CBP, TRAF2, Ubiquitin, IKK-beta, IKK-gamma, IkappaBalpha, MEK, ERK, PI-3-Kinase, PKB, Ft1, GCN4, PDK1, GSK3, NF-AT, and Calcineurin; and domains, fragments or homologues thereof; wherein reassembly of the protein reporter fragments generates an optically detectable signal with the proviso that said protein fragments are not ubiquitin fragments and said assay is not a two hybrid assay.

43. (New) An assay composition for drug discovery comprising complementary fragments of a first protein reporter molecule, said protein complementary fragments exhibiting a detectable activity when associated, wherein each fragment is fused to a separate molecule selected from the group consisting of p53, Chk1, ATR, ATM, Rad 51, PDK2, STAT1, FKBP, FRAP, p70S6Kinase, S6 protein, 4E-BP1, PPP2A, TNFR, TRADD, FADD, p65 subunit of NFkappaB, p50 subunit of NFkappaB, CBP, TRAF2, Ubiquitin, IKK-beta, IKK-gamma, IkappaBalpha, MEK, ERK, PI-3-Kinase, PKB, Ft1, GCN4, PDK1, GSK3, NF-AT, and Calcineurin; and domains, fragments or homologues thereof; with the proviso that said protein fragments are not ubiquitin fragments and said assay is not a two hybrid assay.

44. (New) A method for drug discovery, said method comprising: (A) constructing one or more protein-fragment complementation assays (PCAs'); (B) testing the effects of chemical

compounds on the activity of said assay(s); (C) using the results of said assay(s) to identify chemical compounds with desired activities with the proviso that said protein complementation assays do not utilize ubiquitin fragments and said assays are not two hybrid assays and wherein said method is used to screen for a receptor agonist, a receptor antagonist, a kinase inhibitor, a phosphatase inhibitor, a cell cycle inhibitor, a heat shock protein inhibitor, an E3 ligase inhibitor, a transcription factor inhibitor, an inhibitor of a protein-protein interaction, or a proteasome inhibitor.

45. (New) Protein fragment complementation assays for drug discovery comprising a reassembly of separate fragments of a protein reporter molecule, wherein reassembly of the protein reporter fragments generates an optically detectable signal with the proviso that said protein fragments are not ubiquitin fragments and said assay is not a two hybrid assay and wherein said

assays are used to screen for a receptor agonist, a receptor antagonist, a kinase inhibitor, a phosphatase inhibitor, a cell cycle inhibitor, a heat shock protein inhibitor, an E3 ligase inhibitor, a transcription factor inhibitor, an inhibitor of a protein-protein interaction, or a proteasome inhibitor.

46. (New) An assay composition for drug discovery comprising complementary fragments of a first protein reporter molecule, said protein complementary fragments exhibiting a detectable activity when associated, wherein each fragment is fused to a separate molecule; with the proviso that said protein fragments are not ubiquitin fragments and said assay is not a two hybrid assay and wherein said assay composition is used to screen for a receptor agonist, a receptor antagonist, a kinase inhibitor, a phosphatase inhibitor, a cell cycle inhibitor, a heat shock protein inhibitor, an E3

ligase inhibitor, a transcription factor inhibitor, an inhibitor of a protein-protein interaction, or a proteasome inhibitor.